Confirmation No. 4365

Appln. No.	:	09/749,480
Applicant	:	Kennedy, *et al.*
Filed	:	December 26, 2000
TC/A.U.	:	2674
Examiner	:	Laneau, Ronald
Docket No.	:	6169-141
IBM Docket No.	:	BOC9-1999-0084

DECLARATION UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Peter J. Kennedy, a citizen of the United States of America, residing at ~~4917 Starita Court, Apex, NC 27502,~~ 358 LA STRADA DRIVE #H, SAN JOSE, CA 95123 hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) of Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.

2. IBM had invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).

3. As a named co-inventor for this invention, I submitted the attached Invention Disclosure No. BOC8-1999-0108 together with my co-inventors, James R. Lewis and David Sawin.

4. I make this Declaration to establish that the other co-inventors and I conceived of the present invention at least as early as October 25, 1999, and exercised due diligence from that date to December 26, 2000, the filing date for the above-identified patent application.

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria , VA 22313-1450, or facsimile transmitted to 703-872-9314 to the U.S. Patent and Trademark Office on the date shown below.

Date

Kevin T. Cuenot, Esquire, Reg. No. 46,283

(WP169800:1)

Declaration Under 37 C.F.R. §1.131
U.S. Patent Appln. No. 09/749,480

Docket No. 6169-141

5. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.

Peter J. Kennedy

Date: OCTOBER 21, 2003

STATE OF NORTH CAROLINA)
) ss:
COUNTY OF WAKE)

The foregoing instrument was sworn to and subscribed before me this ____ day of _____, 2003, by _____, who is personally known to me or who has produced _____ (type of identification) as identification.

NOTARY PUBLIC, STATE OF NORTH CAROLINA

(Print, Type or Stamp Commissioned Name of Notary Public)

(WP153800;1)

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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Santa Clara

On October 21, 2003 (DATE) before me, Jane Z. Tolentino, Notary Public (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC")

personally appeared Peter J. Kennedy (NAME(S) OF SIGNER(S))

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

ESIGN JANE Z. TOLENTINO COMM. #1308809 Notary Public-California SANTA CLARA COUNTY My Comm. Exp. April 14, 2005 ESIGN

WITNESS my hand and official seal.

Jane Z. Tolentino
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

_____
TITLE(S)

☐ PARTNER(S) ☐ LIMITED ☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)

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Declaration (Patent)
TITLE OR TYPE OF DOCUMENT

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NUMBER OF PAGES

_____
DATE OF DOCUMENT

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SIGNER(S) OTHER THAN NAMED ABOVE

#8
12-16-03
NP

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DECLARATION UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, James R. Lewis, a citizen of the United States of America, residing at 4000 Majestic Palm Way, Delray Beach, FL 33445, hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) of Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.

2. IBM had invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).

3. As a named co-inventor for this invention, I submitted the attached Invention Disclosure No. BOC8-1999-0108 together with my co-inventors, Peter J. Kennedy and David Sawin.

4. I make this Declaration to establish that the other co-inventors and I conceived of the present invention at least as early as October 25, 1999, and exercised due diligence from that date to December 26, 2000, the filing date for the above-identified patent application.

Certificate Under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria , VA 22313-1450, or facsimile transmitted to 703-872-9314 to the U.S. Patent and Trademark Office on the date shown below.

Reg. No. 46,283

Kevin T. Cuenot, Esquire

Date

(WP153800;1)

PATENT

5. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.

James R. Lewis

Date: Oct 14, 2003

STATE OF FLORIDA)
) ss:
COUNTY OF PALM BEACH)

The foregoing instrument was sworn to and subscribed before me this 14 day of OCTOBER, 2003, by JAMES R LEWIS, who is personally known to me or who has produced _____ (type of identification) as identification.

OFFICIAL NOTARY SEAL
ELAINE P VENTURELLI
COMMISSION NUMBER
CC911860
MY COMMISSION EXPIRES
MAR. 14,2004
NOTARY PUBLIC OF FLORIDA

Elaine P Venturelli

NOTARY PUBLIC, STATE OF FLORIDA

ELAINE P VENTURELLI

(Print, Type or Stamp Commissioned Name of Notary Public)

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Disclosure BOC8-1999-0108

Created By: James Lewis **Created On:** 10/25/99 09:56:07 AM
Last Modified By: James Lewis **Last Modified On:** 11/02/99 09:25:08 AM

*** IBM Confidential ***

Required fields are marked with the asterisk (*) and must be filled in to complete the form.

Summary

Status	Under Evaluation
Processing Location	BOC
Functional Area	Speech Development & Customization (O. Osborne)
Attorney/Patent Professional	Richard Tomlin/Boca Raton/IBM
IDT Team	Harvey Ruback/West Palm Beach/IBM
Submitted Date	10/27/99 04:29:10 PM
Owning Division	SWSD [redacted]
PVT Score	16
Lab	
Technology Code	
Incentive Program	

Inventors with Lotus Notes IDs

Inventors: James Lewis/West Palm Beach/IBM, Pete Kennedy/Raleigh/IBM, David Sawin/Raleigh/IBM

Inventor Name > denotes primary contact	Inventor Serial	Div/Dept	Manager Serial	Manager Name
> Lewis, J.R. (Jim)	722075	76/ALJA	771816	Palermo, Rocco F.
Kennedy, Peter J.	3A8315	49/CHLA	733403	Fulbright, N.E. (Nelson)
Sawin, David	827491	49/CHLA	733403	Fulbright, N.E. (Nelson)

Inventors without Lotus Notes IDs

IDT Selection

IDT Team:	Attorney/Patent Professional:
Harvey Ruback/West Palm Beach/IBM	Richard Tomlin/Boca Raton/IBM

Response Due to IP&L : 12/02/99

Main Idea

***Title of disclosure (in English)**
Method for detecting finger versus stylus touch on touchscreen and corresponding optimization of touch location

***Idea of disclosure**
1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.
This invention solves the problem of how to allow users to use either their finger or a stylus when touching a touchscreen. Currently, touchscreens treat touches by fingers or styluses the same with regard to (1) determining where the user intended the touch location to be, and (2) how the touch location, duration and

frequency are used to determine object selection, button presses, and double-clicks. This is a problem, however, because the optimal touch location and selection strategies are different depending upon whether the user has touched the screen with a finger or with a stylus, owing to the different physical characteristics of a stylus and a fingertip. The advantage of using this invention is that the system can determine whether the object touching the screen is more finger-like or more stylus-like, and adjusts the calculated touch point appropriately.

For the problem of touch location, there is an advantage in detecting whether a finger or stylus is used, particularly for touch screen implementations that have a real-time on-screen cursor. Since the finger may obscure a cursor, a programmed amount of offset will allow the user to see the cursor above his finger. It is known that by means slight finger movement (e.g., rotation about the point of contact with the screen) the user can easily modify the selection point. This visual feedback of cursor position facilitates more precise positioning and leads to better user performance in terms of speed and accuracy. Such cursor offset is a disadvantage when a stylus is used. By means of this invention the user can seamlessly use either a finger or a stylus and the selected point will appear to be the same, always at the point of the cursor. This invention is especially useful in implementations having a small targets requiring user's attention for precise selection.

For the problem of selection strategies, there is an advantage in detecting whether a finger or stylus is used, particularly for touch screen implementations that have a real-time on-screen cursor in a typical Windows environment. When using a stylus, it is fairly easy for the user to select objects, press buttons, and double click icons, even when the size of targets are small, and cannot be easily increased due to the constraints of the Windows operating environment. However, when using a fingertip, it is more difficult to reliably select, press, or double-click small screen targets. To accomodate this fingertip problem, touchscreen selection strategies have been developed to use both the touch location and the touch duration to emulate Windows pointer control. One popular Windows pointer emulation strategy for fingertip touchscreens is known as the "pause strategy." However, the pause strategy can interfere with the simpler interaction method afforded by the more precise stylus. By means of this invention, the stylus user can enjoy the simpler interaction method to select, press buttons and double click, wheras the fingertip user can benefit from selection strategies such as the "pause strategy."

2. How does the invention solve the problem or achieve an advantage,(a description of "the invention", including figures inline as appropriate)?
The data received from the touchscreen can be used to easily discriminate between the touch of a fingertip (which would press against a relatively large portion of the touchscreen -- say about 4 mm square) and the touch of a stylus (which would press against a relatively small portion of the touchscreen -- say about 1 mm square).

If a stylus is detected, then the activated touch area would be the screen directly under the stylus tip. If a fingertip is detected, then the activated area would be just above (about 1-2 mm above) the upper part of the detected touch. The rationale is that if the user is touching with a stylus, the stylus tip will not significantly obscure the user's view of the touched point. A fingertip, however, will obscure the user's view unless the system provides an appropriate offset, moving the activated area up slightly from the detected touch. This applies whether the system provides activation feedback through the state change of objects on the screen or by presenting a cursor (similar to a mouse cursor).

Furthermore, if a stylus is detected, a mouse emulation selection strategy can be used to optimize stylus usability, while a different (pause) strategy can be used to optimize finger usability if a finger is detected. Here are high-level flowcharts for this invention in Figures 1 and 2:

Figure 1. Flow for determining pointer location relative to touch location by touch type (finger versus stylus)

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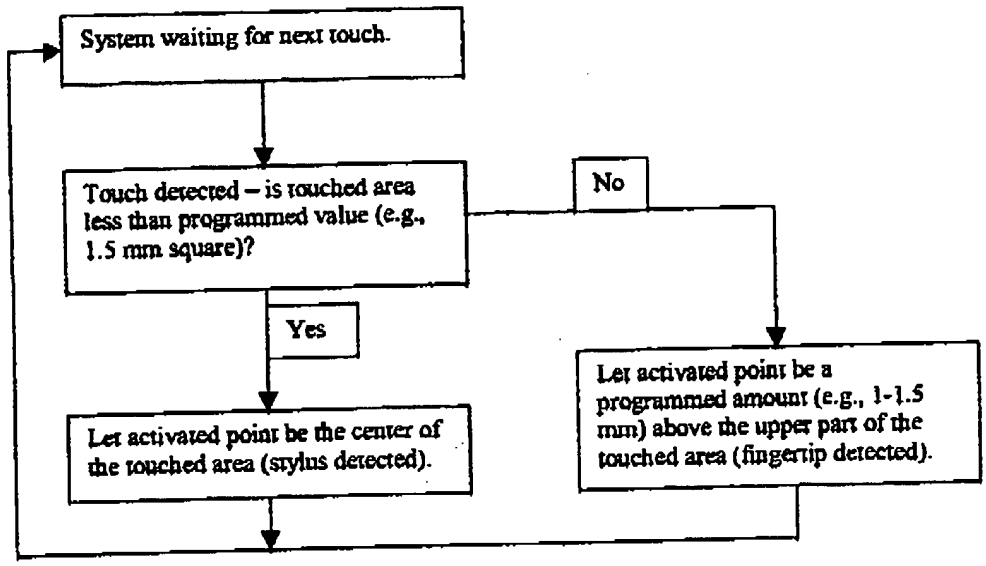

Figure 2. Flow for determining various mouse emulation selection strategies by touch type (finger versus stylus)

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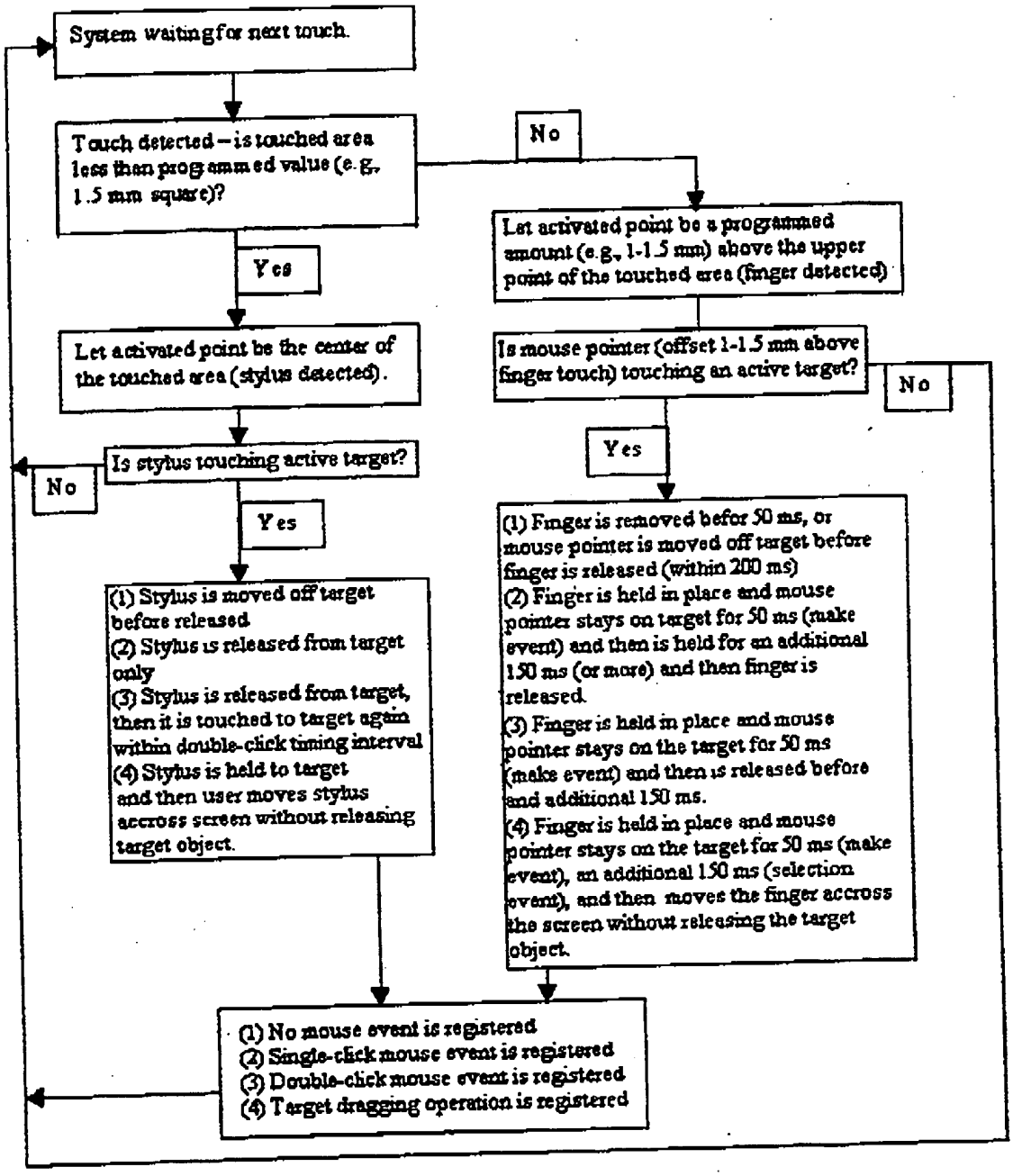
Method for detecting finger versus stylus touch on touchscreen and corresponding optimization of touch location - continued



3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?
I don't know of any other attempts to solve this problem.

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.
It has not yet been implemented, but is being considered for implementation in the Sonoma (formerly Maui) project.

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Method for detecting finger versus stylus touch on touchscreen and corresponding optimization of touch location - continued

***Critical Questions (Questions 1 - 7 must be answered)**

***Question 1**
On what date was the invention workable? 10/17/99 **Please format the date as MM/DD/YYYY**
(Workable means i.e. when you know that your design will solve the problem)

***Question 2** ○ Yes ● No
Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?
If yes, Enter the name of each publication or patent and the date published below.
Publication/Patent:
Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention? ○ Yes ● No
If yes, Enter the name of each publication or patent and the date published below.
Publication/Patent:
Date Published or Issued:

***Question 3** ○ Yes ● No
Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?

Is a sale, use in manufacturing, product announcement, or proposal planned? ○ Yes ● No
If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.
Product:
Version/Release:
Code Name:
Date:
To Whom:
If more than one, use cut and paste and append as necessary in the field provided.

***Question 4** ○ Yes ● No
Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?
If yes, give a date. **Please format the date as MM/DD/YYYY**

***Question 5** ○ Yes ● No
Have you ever discussed your invention with others not employed at IBM?
If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #.

***Question 6** ○ Yes ● No ○ Not sure
Was the invention, in any way, started or developed under a government contract or project?
If Yes, enter the contract number

***Question 7** ○ Yes ● No ○ Not Sure
Was the invention made in the course of any alliance, joint development or other contract activities?

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If Yes, enter the following :Name of Alliance, Contractor or Joint Developer
Contract ID number
Relationship contact name
Relationship contact E-mail
Relationship contact phone

Question 8 ○ Yes ● No

Have you submitted, or are you aware of, any related disclosure submission?

If Yes, please provide the title and docket or disclosure number below:

Question 9

What type of companies do you expect to compete with inventions of this type? *Check all that apply.*

- ☐ Manufacturers of enterprise servers
- ☐ Manufacturers of entry servers
- ☐ Manufacturers of workstations
- ☒ Manufacturers of PC's
- ☒ Non-computer manufacturers
- ☐ Developers of operating systems
- ☐ Developers of networking software
- ☒ Developers of application software
- ☒ Integrated solution providers
- ☐ Service providers
- ☒ Other (Please specify below)

Developers of pervasive PDA and PDA-like devices

Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evalu

(The Patent Value tool can be used by you or the evaluation team to determine the potential licensing value of your invention.)

These are the answers which were entered into the **Patent Value Tool.**

Market

What is the anticipated annual market size (in dollars) that will be captured by your invention?
Too new to estimate
Reason(s) for above Answer The invention pertains to a detail for touch screen design for pervasive computing.

CLAIMS

Question 1 - How new is the technical field?
Existing
Reason(s) for above Answer Touch screens have been around for a while
Question 2 - How central is the invention to the product(s) which might be expected to contain the invention?
Essential
Reason(s) for above Answer For certain types of handheld products, the touchscreen would be the primary physical aspect of the user interface.
Question 3 - What is the scope of the claim?
Detail
Reason(s) for above Answer This addresses a very specific aspect of how to optimize human-computer interaction with a touch screen.

PORTFOLIO NEED [redacted]
What are the portfolio needs in the area of your invention?
Listed in PPM Needs
Reason(s) for above Answer See 400 A.

EXPLOITATION & ENFORCEMENT
Question 1 - How easily can the use of the invention by a competitor be detected?
Trivially
Reason(s) for above Answer It's use would be obvious in the user interface.
Question 2 - How easily can the use of the invention be avoided by a competitor?
Unavoidable
Reason(s) for above Answer If a competitor wanted to provide this type of flexibility of use, I can't think of any other way to do it.

BUSINESS VALUE
Question 1 - What percentage of the companies producing products in the field of this invention might use this invention?
Broadly cloned
Reason(s) for above Answer Others would want to provide this flexibility of use.
Question 2 - What is the value of this patent to current or anticipated Alliance Activity between IBM and other companies?
None anticipated
Reason(s) for above Answer Don't know of any.
Question 3 - What is the value of this patent to current or anticipated Technology Transfer Activity between IBM and other companies?
None anticipated
Reason(s) for above Answer Don't know of any.
Question 4 - Does it result in prestige to IBM?
Industry wide
Reason(s) for above Answer Good solution to a persistent problem.

Post Disclosure Text & Drawings

(Form Revised 12/17/97)

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